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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,570	05/31/2000	Steven M. Reynolds	P99, 0629	3873

23641 7590 04/21/2003

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FORT WAYNE, IN 46802

EXAMINER

LAU, TUNG S

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/584,570

Applicant(s)

REYNOLDS ET AL.

Examiner

Tung S Lau

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39, 47, 48, 50, 51 and 53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12, 14-28, 30-35, 37-39, 47, 48, 50, 51 and 53 is/are rejected.
- 7) ☒ Claim(s) 5, 13, 29 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 1-4, 6-12, 14-28, 30-35, 37-39, 47, 48, 50, 51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (U.S. Patent 5,563,351) in view of Garrett et al. (U.S. Patent 4,951,271).

Regarding claims 1, 2, 3, 17, 31, 39, 48 and 51:

Miller discloses a method, apparatus of facilitating maintenance of a pump including the following steps, providing a pump including wear parts (abstract), a processor and memory (fig. 2, unit 28); sensing at least one structural operating behavior of the pump indicative of the operation of the pump (col. 1, lines 61-66); generating operational data reflective of the sensed operating behavior (col. 2, lines 1-8) ; storing the generated operational data in the memory (fig. 5); storing parts identification data identifying wear parts of the pump in the memory; storing at least one predetermined level of operational information (col. 2, lines 1-8); operating the processor to compare the stored predetermined level to the stored operational data and in dependent response thereto outputting information as to the desirability of replacing or repairing at least one selected wear part (col. 2,

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lines 9-14, col. 1, lines 14-24), generating operation data reflective of the sensed condition ((col. 2, lines 1-8), compares to predetermined level to the stored data in dependent response thereto outputting information as to the desirability of modifying the operation of pump ((col. 2, lines 1-17).

Regarding claims 4, 6, 7, 8, 9, 10, 11, 12, 15, 16, 18-22, 25-28, 30, 32-35, 37, 38, 47, 50 and 53:

Miller discloses a method, apparatus of facilitating maintenance of a pump including identifying the part (col. 3, lines 50-62), is a physical integrity of the pumping element of the pump (col. 3, lines 50-62), use of a check valve (fig. 2, unit 22), use of sensor (fig. 2, unit 30, 32), flow, fill rate of pump stored in memory (col. 3, lines 38-49, col. 4, lines 7-31), acceleration of a rate of pump col. 4, lines 7-31), sense temperature of the pump (col. 3, lines 23-37), sense pressure of the pump (col. 4, lines 23-31), the processor with communication with a stand alone computer (fig. 2), handheld computer using RF communication (fig. 2), linked to at least one processor of another pump (col. 1, lines 13-24, fig. 2), operation data response to the outputting info of modifying the operation of pump (col. 2, lines 9-17), using cycle flow rate of the pump (fig. 5), update data in measuring flow ((fig. 5), included pumping chamber (fig. 4), check valve (fig. 2, unit 20), compare to store result (col. 2, lines 1-13).

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Miller does not disclose the acoustical sensor communicating operational data reflective of the sensed operating condition to the processor, and the signal is vibratory. Garrett discloses the acoustical sensor communicating operational data reflective of the sensed operating condition to the processor (col. 2, lines 19-48), and the signal is vibratory (col. 2, lines 19-22), in order to have a low cost, very simple construction and highly sensitive system (col. 1, lines 9-20, col. 2, lines 19-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miller to have the acoustical sensor communicating operational data reflective of the sensed operating condition to the processor, and the signal is vibratory taught by Garrett in order to have a low cost, very simple construction and highly sensitive system (col. 1, lines 9-20, col. 2, lines 19-22).

Claim Objections

2. Claims 5, 13, 14, 23, 24, 29 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: prior art fail to teach the use of a pumping element is a diaphragm.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

3. Applicant's arguments filed 2/12/2003 have been fully considered but they are not persuasive.

A. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Garrett discloses a simple and highly sensitive vibration analysis system to predict the system status (col. 2, lines 19-22, col. 12, lines 62-67), Garrett also discloses that is well know in the art to use acoustic analysis to analyze vibration system (col. 1, lines 9-20).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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TC2800 RightFAX Telephone Numbers : TC2800 Official Before-Final RightFAX - (703)

872-9318, TC2800 Official After-Final RightFAX - (703) 872-9319

TC2800 Customer Service RightFAX - (703) 872-9317

TL

April 10, 2003



John Barlow
Supervisory Patent Examiner
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